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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
KARL HAEBERLE, ET AL.	: EXAMINER: NILAND, P. D.
SERIAL NO: 10/522,715	:
FILED: JANUARY 28, 2005	: GROUP ART UNIT: 1796
FOR: WATER-EMULSIFIABLE ISOCYANATES HAVING IMPROVED PROPERTIES	:

THIRD DECLARATION UNDER 37 C.F.R. § 1.132

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

I, Karl Haeberle, declare and state as follows:

1. I am the same Karl Haeberle who executed declarations that I understand were filed on February 1, 2008 (first Haeberle Declaration) and on June 3, 2008 (second Haeberle Declaration).

2. I am familiar with the claims, and have read the Office Action mailed September 5, 2008. In the Office Action, the Examiner dismisses the second Haeberle Declaration because in the specification herein, Example 1 employs a room temperature reaction while Example 2 employs reaction at 130°C. The Examiner now additionally relies on US 3,144,452 (Wild et al) and US 2,979,485 (Burkus) to support a finding that the difference in temperature could have had an effect on the difference in results shown in my previously-filed declarations.

3. I have also been informed that in a discussion between counsel for the Applicants and the Examiner on November 3, 2008, the Examiner suggested presenting comparative data wherein the temperature conditions are the same. Accordingly, the following comparative experiments were conducted under my supervision and/or control.

4. Example 1 (reaction of HDI isocyanurate with a monofunctional polyethylene oxide with a molecular mass of 500 at room temperature) of the above-identified application was repeated at a temperature of 130°C, i.e., at the same temperature Example 2 was performed (reaction conditions and results different from Example 1 are marked in **bold**).

5. 600.5 g (1.20 mol) of a monofunctional polyethylenoxide with a molar mass of 500 g/mol, prepared starting from methanol, are added to 3 560 g (18.8 eq NCO) of isocyanate A1, **and the components were stirred at 130°C for 80 minutes, after which the product was cooled to room temperature. Hydrophilicized isocyanate a1'** was obtained, with an NCO content of **17.1%** and a viscosity of **2.6 Pas**.

6. Isocyanate a1' was mixed with isocyanate B at 100° C in the same proportions indicated in Table 1' below, which table corresponds to Table 1 of the above-identified application, except as noted in **bold**. Like isocyanate a1' itself, the mixtures obtained can be emulsified effectively in water by simple stirring, to produce fine emulsions, but have more rapid increases in hardness and higher ultimate hardnesses.

Table 1'

Example No. 1	**Isocyanate a1'** (% by weight)	Isocyanate B (% by weight)	NCO content (% by weight)
1	85	15	**16.7**
2	75	25	**16.8**
3	70	30	**16.9**
Comparative, C	100	-	**17.1**

7. Pendulum damping was measured as described in the above-identified application, the results shown in Table 2' below, which table corresponds to Table 2 of the above-identified application, except as noted **in bold.**

Table 2'

Baking temp. [°C]	1.1	1.2	1.3	C
60	**38**	**40**	**40**	32
70	**55**	**59**	**59**	47
80	**74**	**74**	**92**	62
90	**80**	**97**	**105**	72
100	**106**	**112**	**119**	81
110	**106**	**120**	**122**	83
120	**105**	**123**	**127**	86

8. I have named the product obtained by this example a1' in order to distinguish it from product a1 (without an apostrophe) of Example 1 of the above-identified application.

9. The above-discussed data for example a1' shows that the measured physical properties thereof are not significantly different from such properties of Example 1 of the above-identified application, despite the difference in reaction temperature.

10. However, it is not possible to repeat Example 2 at the same temperature of Example 1, namely at room temperature, since the isocyanate B in Example 2 (Vestanat® 1890/100, formerly Degussa, now Evonik, IPDI isocyanurate) has a melting range of 100 to 115°C, as confirmed by the data sheet **attached herewith.**

11. If this example were repeated at room temperature, no significant reaction between the isocyanate and the polyethylene oxide would take place because the isocyanate is solid at room temperature.

12. The undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

13. Further declarant saith not.

Signature

3.12 2008

Date

Customer Number
22850
Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 05/06)

GESAMTSEITEN 05

VESTANAT® T 1890/100

43.13.016e / 07.06

General description

VESTANAT T 1890/100 is a cycloaliphatic polyisocyanate based on isophorone diisocyanate (VESTANAT IPDI). The basic structure is the isocyanurate ring, its NCO-functionality is between 3 and 4. VESTANAT T 1890/100 is a solvent-free material, supplied as pellets. The melting range (Kofler bank) is appr. 100 °C.

Specification

Property	Value	Unit	Test method	
NCO content	17.3 ± 0.3	% wt.	DIN EN ISO 11 909	ASTM D 2572
VESTANAT IPDI monomer	≤ 0.5	% wt.	ISO 10 283	–

Typical data

Melting range	100 – 115	°C	Kofler bar	–
Density at 20 °C	1.15	g/cm^3	–	–
Bulk density	600	kg/m^3	DIN ISO 171	–

Properties and Applications

This cycloaliphatic polyisocyanate is light-stable and non-yellowing. It has especially been developed as an isocyanate crosslinking agent for 2K PUR coatings or adhesives. VESTANAT T 1890 is also supplied as 70 pbw. solutions in various solvents (Product Information no. 43.13.022e). Detailed information conc. the use in 2K PUR formulations is provided in leaflet no. 43.13.052e.

VESTANAT T 1890/100 can also be used for the manufacture of blocked polyisocyanates or PUR resins like waterborne polyurethane dispersions (PUD).

VESTANAT T 1890/100 is soluble in all types of conventional non-protic solvents (ketones, esters, aromatics, chlorinated hydrocarbons and white spirit). Solvents containing compounds able to react with isocyanates, such as alcohols, amines and water, have to be avoided. The water content of any solvent used should be less than 0.05 %.

Dissolving Procedure (industrial scale)

The vessel to be used for the dissolving process should be made of stainless steel or enamelled. A closed system should be used, ventilated with nitrogen or dried air. Equipment for heating and cooling is required.

The solvent is charged, preheated to approx. 50 °C and approx. one third of the solid VESTANAT T 1890/100 is added under stirring. The mixture is heated to approx. 80 °C within 30 minutes and the remainder of the VESTANAT T 1890/100 is added in two portions under stirring.

Alternatively, if no stirring equipment is available, the solvent/solution can be circulated by pumping, the liquid entering the reactor at its base.

When the VESTANAT T 1890/100 has dissolved completely, the solution is cooled to ambient temperature and filtered through a 10 µ filter (indicative figure: approx. 0.25 m^2 of filter surface for a 10 m^3 plant).

Filling into drums should be carried out under nitrogen or dry air. Before being filled, the drums should be checked for the presence of moisture.

Storage and Packaging

VESTANAT T 1890/100 can be stored in unopened containers for at least one year without loss of quality in accordance with the above specification.

VESTANAT T 1890/100 is supplied in non returnable steel drums containing 125 kg (216 l).

Safety and Handling

The handling of coating materials or adhesives which contain reactive polyisocyanates and residues of monomer diisocyanate require adequate protection proceedures and trained personal. It must not be used in Do-It-Yourself applications.
Please refer to our Material Safety Data Sheet.

Evonik Degussa GmbH
Coatings & Additives
Paul-Baumann-Str. 1
45764 Marl, Germany
phone: +49-2365-49-02
fax: +49-2365-49-5030

Evonik Degussa Corporation
Coatings & Additives
379 Interpace Parkway
Parsippany, NJ 07054-0677
phone: +1-973-541-8462
fax:+1-973-541-8460

www.coatings-colorants.com
www.smart-formulating.com
e-mail: co@evonik.com

Replaces leaflet 43.13.016e / 02.06 and all former issues
Marl, July 14, 2006

VESTANAT® = registered trademark of Evonik Degussa GmbH

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